

Preliminary Amendment in New Application, Attorneys' Docket YCF15302

Page 20, line 19, change "occurred" to --occurs--;

Page 20, line 20, change "caused" to --causing--;

Page 20, line 21, change "had" to --has--;

Page 21, line 1, insert --is broken-- after "pattern" (first occurrence);

Page 24, line 11, delete the indentation (so that the sentence becomes part of the previous paragraph).

Page 24, line 13, begin the sentence with an indentation (so that the sentence begins a new paragraph);

Page 25, line 16, insert --vertical-- after "similar";

Page 26, line 4, change " $F_0 - (F_1 + \frac{1}{2}H)$ " to $--F_0 - (F_1 - \frac{1}{2}H)--$;

In the Claims

Cancel claims 1-11 and add new claims 12-20 as follows:

12. A field motion detector for generating a field motion detection signal from information contained in fields of opposite parity of a 2-1 interlaced format video signal having an input receiving the video signal (F_0) from a source, a first delay delaying the video signal at the input by one field period less one half of one scanning line period and providing a first delayed output ($F_1 - \frac{1}{2}H$), a second delay delaying the video signal at the input by one field period plus one half of one scanning line period and providing a second delayed output ($F_1 + \frac{1}{2}H$), a first subtractor subtracting the first delayed output from the video signal to provide a first difference, a second subtractor subtracting the second delayed output from the video signal to provide a second difference, a keep smaller absolute value comparator selecting and providing, as an output indicator of field motion, the magnitude of field motion the smaller of the first difference and the second difference, the improvement characterized by a single line vertical differentiator responsive to vertical transitions within a field, providing an output indicative of vertical energy, a comparator comparing the magnitude of field motion from said keep smaller absolute

Preliminary Amendment in New Application, Attorneys' Docket YCF15302

15 value comparator to the vertical energy from said single line vertical differentiator, and
a switch controlled by said comparator such that the detector provides as its output an
indication of field motion, the magnitude of the field motion taken from the output of said
keep smaller absolute value comparator when the field motion magnitude is greater than said
vertical energy magnitude, and provides as its output an indication of no field motion when the
20 vertical energy magnitude is greater than the field motion magnitude.

13. The field motion detector of claim 12 wherein said single line vertical differentiator
comprises a third subtractor subtracting the first delayed output from the second delayed output
to provide a third difference, said third difference constituting an output indicative of vertical
energy.

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cont

14. A motion detector for generating a frame motion detection signal from information
contained in successive frames of a 2-1 interlaced format video signal, the detector having an
input receiving the video signal (F0) from a source, a delay delaying the video signal at the
input by one frame and providing a frame delayed output (F1), and a subtractor subtracting the
delayed video signal from the video signal providing a frame motion signal, the improvement
characterized by

a horizontal low pass filter receiving the frame motion signal and outputting a
horizontally low pass filtered frame motion signal,

a first rectifier rectifying said horizontally low pass filtered frame motion signal,

10 a first threshold removing components in the rectified horizontally low pass filtered
frame motion signal below a threshold level, outputting a first filtered, rectified and
thresholded signal,

a horizontal high pass and vertical high pass filter receiving the frame motion signal
and outputting a horizontally high pass and vertically high pass filtered frame motion signal,

15 a second rectifier rectifying said horizontally high pass and vertically high pass filtered
frame motion signal,

Preliminary Amendment in New Application, Attorneys' Docket YCF15302

a second threshold removing components in the rectified horizontally high pass and vertically high pass filtered frame motion signal below a threshold level, outputting a second filtered, rectified and thresholded signal,

a horizontal high pass and vertical low pass filter receiving the frame motion signal and outputting a horizontally high pass and vertically low pass filtered frame motion signal,

a third rectifier rectifying said horizontally high pass and vertically low pass filtered frame motion signal,

a third threshold removing components in the rectified horizontally high pass and vertically low pass filtered frame motion signal below a threshold level, outputting a third filtered, rectified and thresholded signal, and

an additive combiner adding the first, second and third filtered, rectified and thresholded signals outputting a modified frame motion signal less influenced by subcarrier signal components.

15. The motion detector of claim 14 wherein said second threshold detector has a threshold level such that substantially all color subcarrier signal components are below its threshold.

16. The motion detector of claim 14 or claim 15 further comprising expanders expanding the modified motion signal horizontally, vertically and temporally.

~~17.~~ A film detector for detecting 25 frame/second sources in PAL television signals or for detecting 30 frame/second sources in NTSC television signals, the detector receiving a field motion signal indicating motion from interlaced field to interlaced field, comprising

an accumulator responsive to said field motion signal and outputting an indication of motion during an entire field,

a field delay responsive to the accumulator output outputting a one field delayed accumulator output,

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cont

Preliminary Amendment in New Application, Attorneys' Docket YCF15302

10 a comparator responsive to the accumulator output and the field delay output, the
comparator comparing the current field motion indicated by the accumulator output to the last
field motion indicated by the accumulator output delayed by one field by said field delay, the
comparator outputting a binary signal having a first sense when the current field motion (B) is
greater than the last field motion (A) and a second sense when the current field motion is less
than or equal to the last field motion,

15 an operator responsive to the accumulator output and the field delay output, the
operator outputting a signal indicative of the ratio of present field motion to adjacent field
motion,

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cont
a threshold responsive to the operator output, having its threshold set by a minimum
motion ratio signal, and outputting a binary signal having one sense when the ratio of present
field motion to adjacent field motion is above the threshold level and a second sense otherwise,

an AND gate receiving the outputs of said comparator and said threshold, said AND
gate outputting the comparator output when the threshold output is in said one sense, and

a pattern detector receiving the output of said AND gate for determining the occurrence
of a predetermined pattern of moving and non-moving fields.

²
~~18~~ The film detector of claim ¹~~17~~ wherein said adjacent field motion ratio may be
expressed as $|(A - B)/[(A + B)/2]|$, where B is the current field motion and A is the last field
motion (A).

³
~~19~~ The film detector according to claim ¹~~17~~ or claim ²~~18~~ further comprising a frame
motion verifier receiving a frame motion signal indicating motion from the same parity field to
the next same parity field, the frame motion verifier interrupting receipt of the field motion
signal by said accumulator in the absence of frame motion coincident with field motion.